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Improved Gamma Bang Time Measurements on Omega HANS HERRMANN, STEVE CALDWELL, SCOTT EVANS, JOE MACK, TOM SEDILLO, CARLTON YOUNG, Los Alamos National Laboratory, COLIN HORSFIELD, Atomic Weapons Establishment, VLADIMIR GLEBOV, CHRISTIAN STOECKL, Laboratory for Laser Energetics, U. Rochester — The time of peak fusion reactivity with respect to the impingement of laser light on an ICF capsule is known as Bang Time (BT). This is an essential parameter in the understanding of ICF implosions. Traditionally, BT has been determined through temporal measurements of 14 MeV fusion neutrons. Unlike neutrons, gammas are not subject to temporal spreading, making proximity of the detector to the source a lesser concern. However, the unfavorable branching ratio for the DT fusion gamma-ray branch (∼5e-5) presents detector sensitivity challenges. A Gas Cherenkov Detector (GCD) has been developed to overcome these challenges. Initial gamma bang time (GBT) measurements on Omega were recently made using a GCD. Recent improvements have significantly enhanced the ability to accurately measure GBT, and the first measurements of GBT on 50/50 DT Cryo shots have now been made.

Hans Herrmann
Los Alamos National Laboratory

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